Mars Exploration Rover Mission

Spirit and Opportunity

Month in Review
December 13, 2004 - January 3, 2005

On January 3, 2005,
Spirit celebrated one year on Mars!

Panoramic camera images taken at Spirit's landing site in Gusev Crater on January 7, 2004.

Spirit has driven 2.47 miles (3.97 kilometers) as of December 20, 2004.

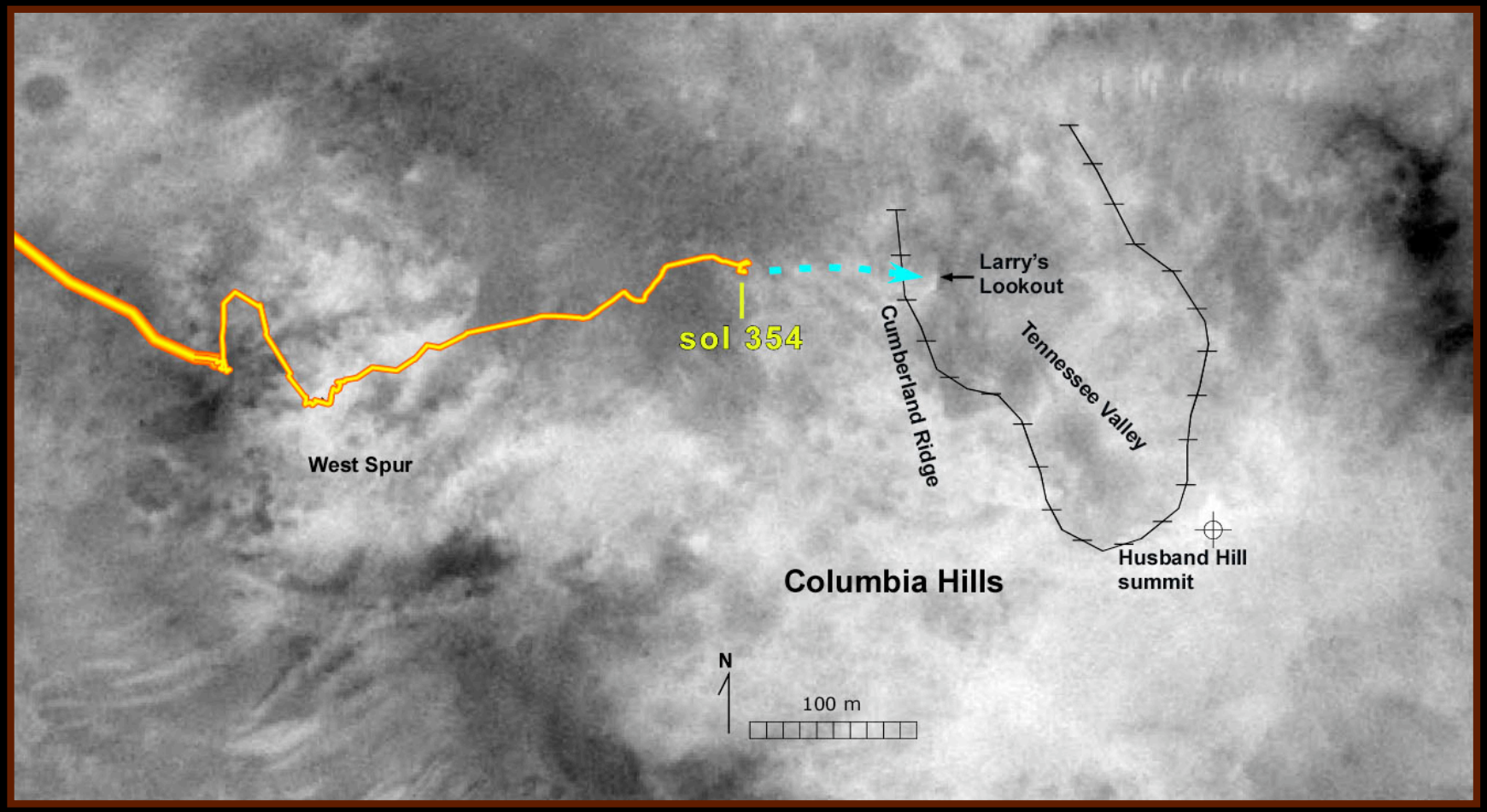
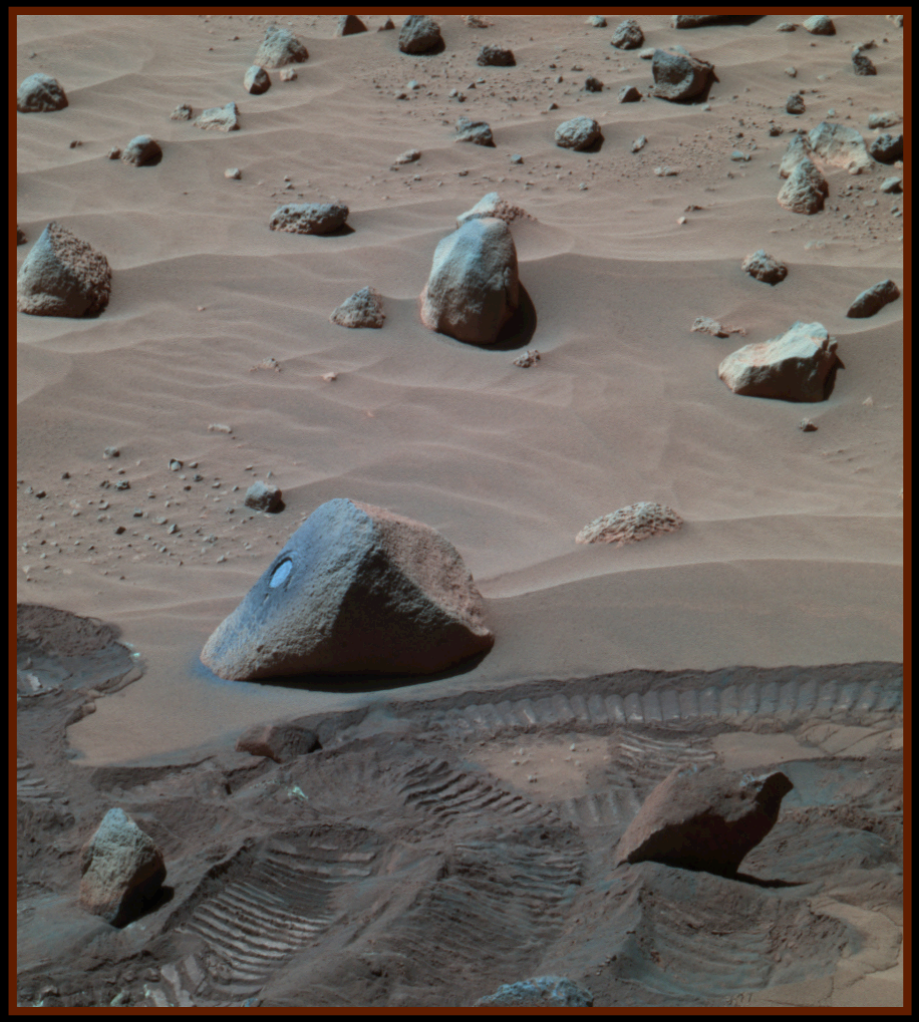


Image of Spirit's base map taken by the Mars Orbiter Camera aboard NASA's Mars Global Surveyor.

Spirit is heading toward Larry's Lookout to peek around from a high vantage point and decide where to rove next.

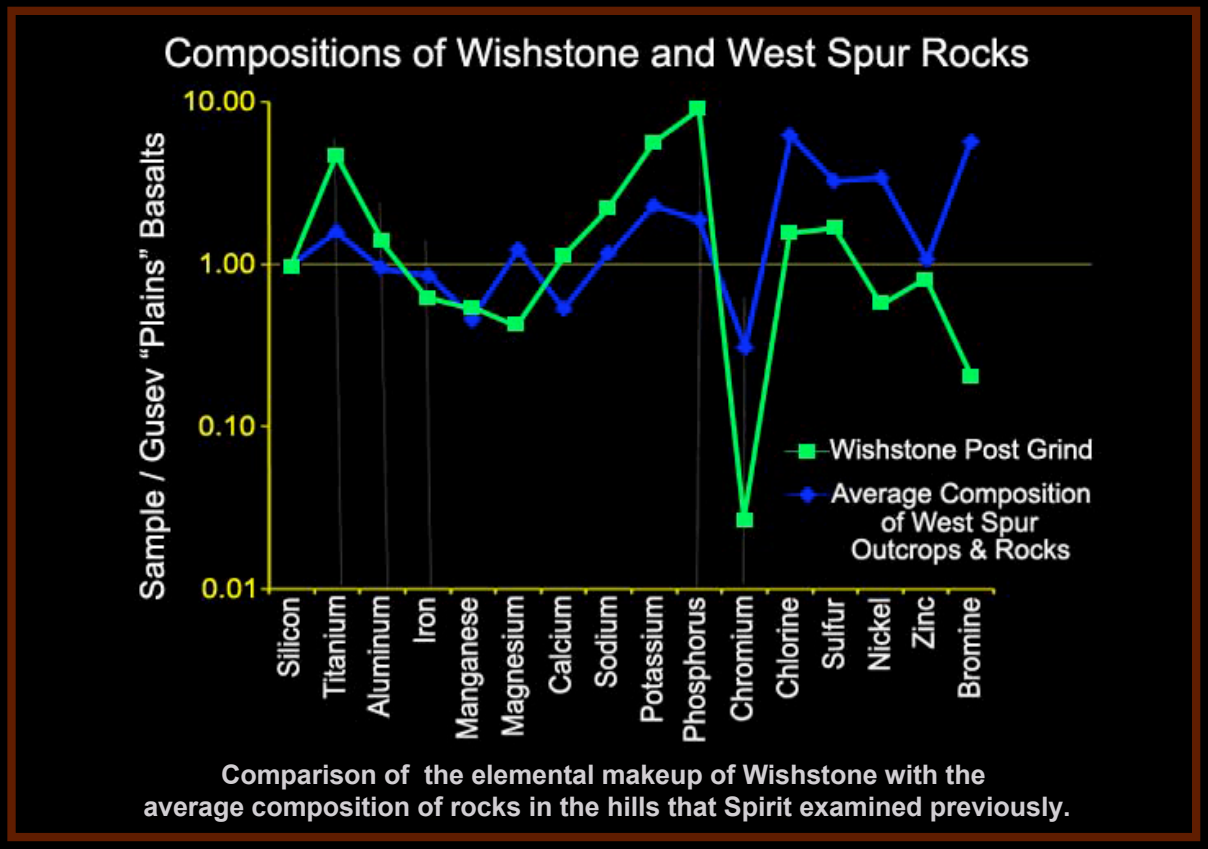
Spirit's latest exciting science discovery came from a rock dubbed "Wishstone."



False-color panoramic camera image, December 18, 2004.

Wishstone has a different mineral makeup from that of any rocks encountered by Spirit so far!

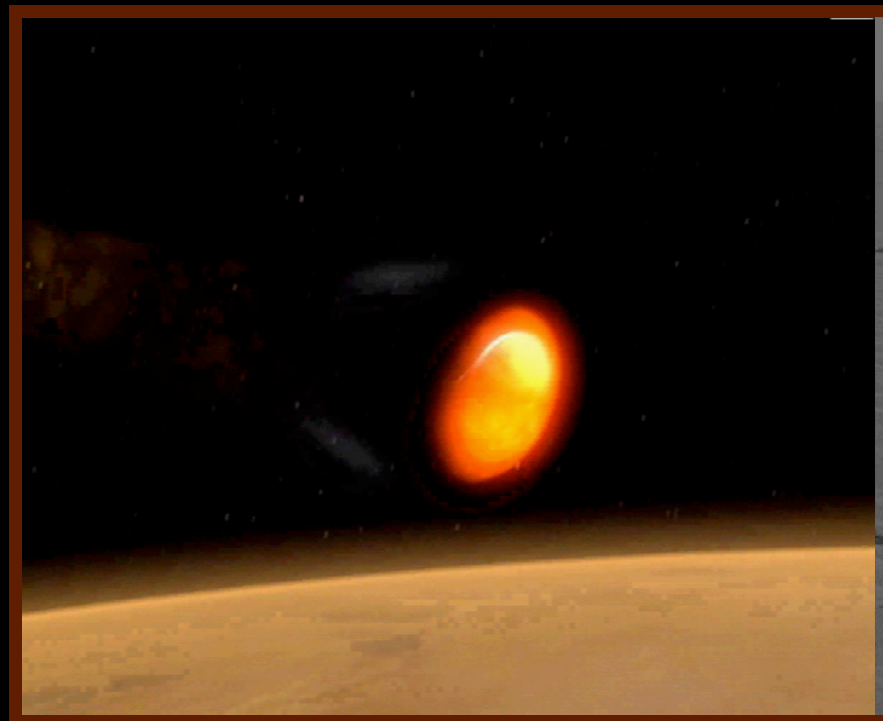
Wishstone is richer in phosphorus than any other Mars rock examined so far on the mission.



Comparison of the elemental makeup of Wishstone with the average composition of rocks in the hills that Spirit examined previously.

Scientists are still investigating what the high levels of phosphorus mean in relation to the history of water on Mars.

Meanwhile, as Opportunity moves toward its one-year anniversary, it has been busy checking out its heat shield.



NASA/JPL/Cornell

Heat Shield's Main Piece, NASA/JPL/Cornell

The heat shield safely protected the rover as it blazed into the martian atmosphere at a toasty 12,000 mph on January 24, 2004.

Opportunity's heat shield turned inside out from the pressure of its impact on Mars.

Flank piece of heat shield.
Navigation camera, December 28, 2005 .

Close-up view of flank piece of heat shield.
Navigation camera, December 29, 2005 .

Engineers who designed the heat shield are examining the wreckage to detail its overall performance, which will help them in designing future missions.

Spirit will continue studying phosphorus-rich rocks around Columbia Hills.

NASA/JPL/Cornell

After Opportunity finishes examining its heat shield, the rover team plans to send Opportunity southward 3/4 of a mile (1.2 kilometers) to the crater "Vostok."

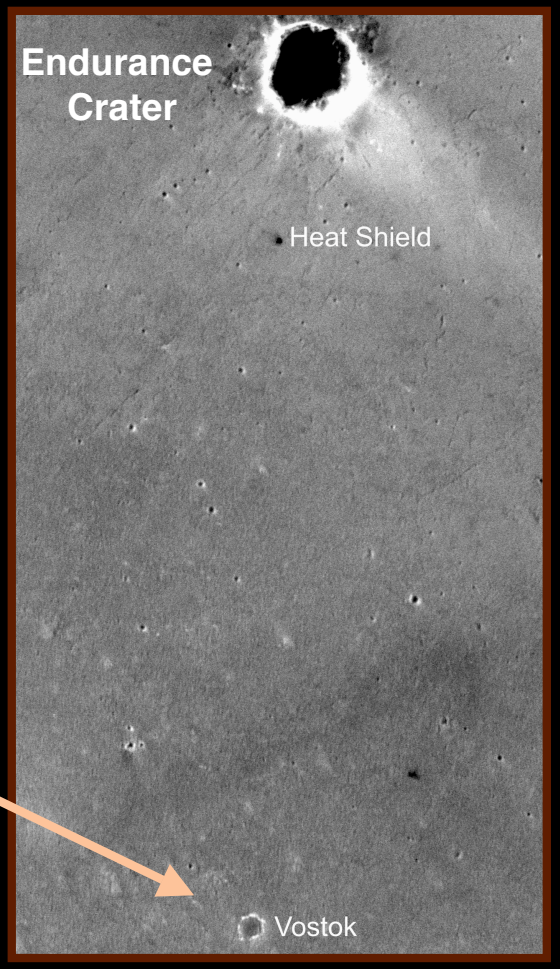


Image of Opportunity's current "home" location, Mars Orbiter Camera aboard Mars Global Surveyor. NASA/JPL/MSSS